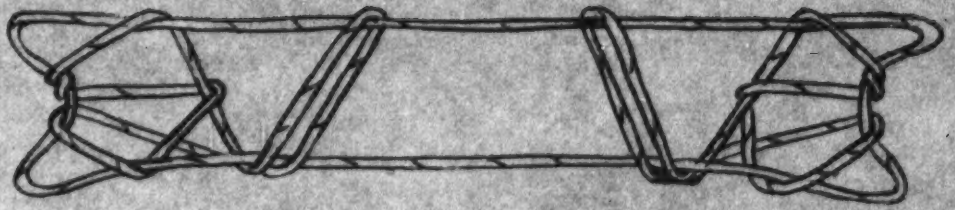

Figure 40

XXXI. THE ARMS

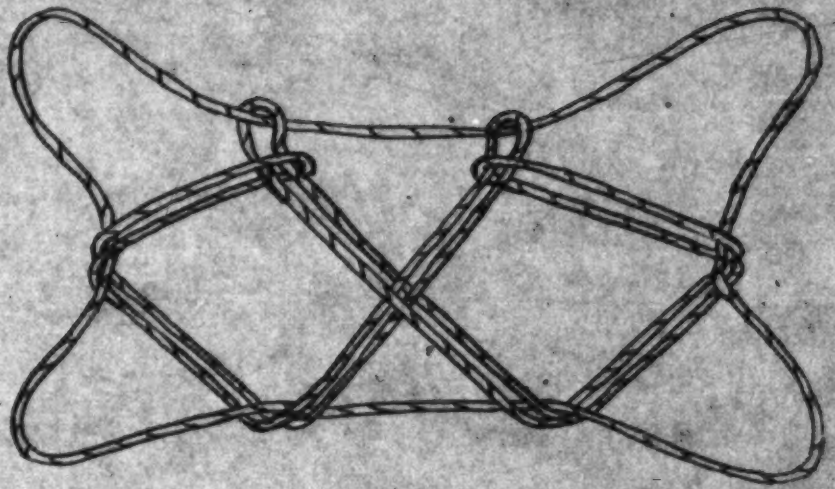

Figure 79
LVIII. TWO SMALL SEAGULLS

4: Jenness--71B (1913-16) 1924 Copper Eskimo
116, 524

"LVIII. Two Small Seagulls- nauyätciäk (Mackenzie river and Coronation gulf)

The movements of this figure are rather unusual.

Opening A.

Pass the thumbs down on the proximal side of the other strings and from the proximal side take up the ulnar little finger strings.

Pass the little fingers into the index loops from the distal side and hook them down over the ulnar thumb strings.

Drop the index loops.

In the middle two diagonal strings cross each other.

Pass the indices from the distal side into the upper quarter thus formed above the diagonals, and hook their palms round behind the lower string of each diagonal and draw it out, turning the indices outward.

Turn the little fingers also outward, retaining only their proximal loops. Straighten these loops, then remove the index loops to the little fingers.

Navaho the thumbs, then with the palms of the little fingers hook down and through the little finger loops the transverse string that has just been dropped from the thumbs. You have 'the two sea-gulls.'"

(1913-16) 1924

Copper Eskimo

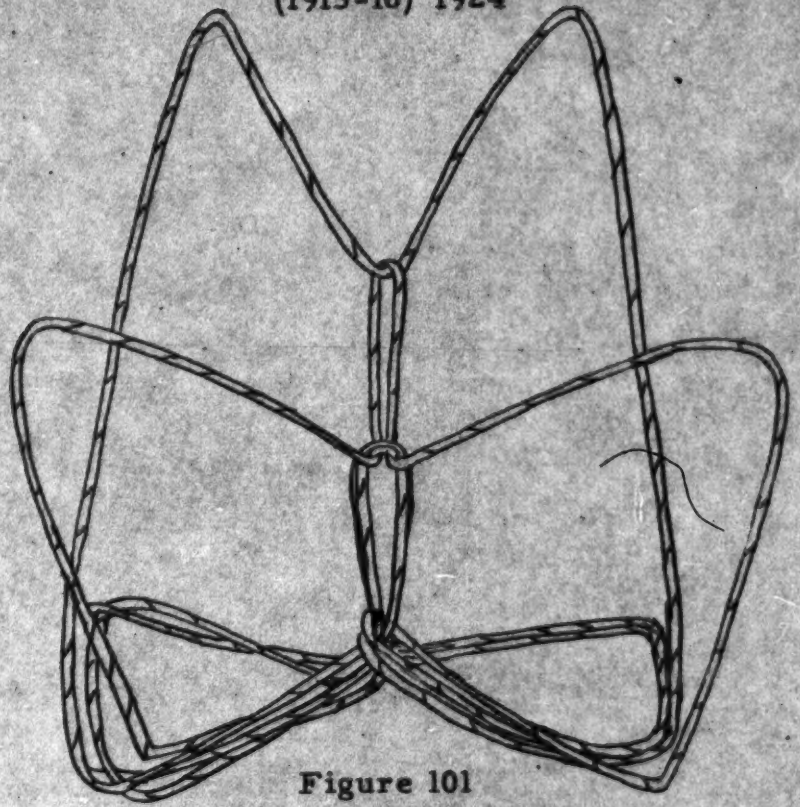

Figure 101
LXXIII. THE SQUIRREL

"FIGURES BEGINNING WITH A MODIFICATION OF OPENING A

LXXIII. The Squirrel

The Barrow and Inland natives call this figure tcʌkcrɪk, the Mackenzie natives tcikcʌk, and the Coronation gulf natives χʌkχɪk. All have the same meaning, 'squirrel.' I have never seen the Coronation gulf natives make the complete figure; they carry out half the movements and obtain a result approximately the same. Another figure, 'the angry man' (see No. LXXIV) would be exactly the same but for an introductory movement which occurs, so far as I am aware, in but two other figures (Nos. LXXV and CLI). But 'the angry man' is known on both the Siberian and Alaskan coasts, where it is accompanied by chants. It is found in the Mackenzie also, but the chant is almost absent, while in Coronation gulf the figure appears to be altogether unknown. This suggests that 'the squirrel' originated, or was at least preserved, among the western Eskimos, and was handed on by them to their eastern kinsmen.

Position 1.

Revolve the right hand once in a clockwise direction.

With the backs of the indices take up the opposite palmar strings as in Opening A.

Pass the thumbs down distal to the radial index strings and with their backs from the proximal side take up the ulnar little finger strings and return.

Drop all but the two loops on each thumb; hold these in the hands, make Opening A again, and repeat the movement. [86B]

You have finally four loops on each thumb. Insert the little and ring fingers into the thumb loops from the distal side, and hold the ulnar strings firmly against the palms.

Allow the two distal radial thumb strings to slip off.

Two radial strings are left on each thumb.

With the backs of the indices from the distal side take off each distal radial thumb string.

Raise the thumbs and lower the indices--'the squirrel' pops up out of its hole. Lower the thumbs--it returns inside again. Raise the indices and lower the thumbs still more--it pops up again. Each time that it pops out say tci tci, a sound imitating its squeak.

The Copper Eskimos stopped short at the end of the first movement. Their squirrel then popped out in two different places."

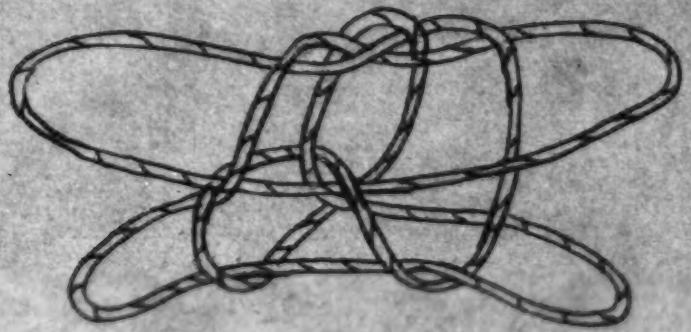

Figure 120
LXXXIII. THE MAN AND HIS HARPOON

"FIGURES BEGINNING WITH OPENING B

LXXXIII. The Man and his Harpoon

This figure is known at Indian point, Siberia, in the Mackenzie delta, and in Coronation gulf. At Indian point it is called aγacoki, a man's name, and a chant describes how he harpoons a walrus, the action being illustrated by a method of dissolution which causes the left index to be caught in a noose. The Mackenzie natives call the figure aγayuqaq, 'the old man,' and have a chant describing how he harpoons an ice-keg, illustrated in the same way. The Coronation gulf natives call the figure utok, 'vulva,' and dissolve it by merely dropping the loops. I have not heard it described as a separate figure by the Alaskan Eskimos, though two or three other figures known to them follow the same steps (see Nos. LXXXVI and LXXXVII, and cp. CVII and the following figures).

Opening B.

Insert the last three fingers of each hand into the index loops from the proximal side and hook down with them the radial string.

With the backs of the thumbs from the proximal side draw through the thumb loops the radial index strings.

With the backs of each middle finger take up the string on each side which crosses the palm of the thumb, and on the proximal side of all the strings push the middle finger loops through each other and interchange them on the middle fingers.
Drop the index and thumb loops.
You have the figure variously named aɣacoki, aŋayuqaq and utok.

The Indian point natives chant:

aɣäcok aivɑk kɑn·a	Agasoki, the walrus down there
nayuʌɣo aɣäcokɪm	Harpoon it, Agasoki.
anäkaɣlumɪnaɣa	I have not missed it.

The Mackenzie Eskimos chant:

aŋayuqaq tcikulɪj·am qoɣonavatɪn	Old man, the young ice is going to crush you.
tuvaq paŋna nauliɣun	The ice-cake over there, stick your spear into it. [99B]

There are two strings which run vertically from the upper transverse string to the middle on the proximal side of the strings, and two others which run from upper to lower transverse strings on the distal side. The Indian point natives took up the former with the right index and the latter with the left index; the Mackenzie natives took up the

latter with the palm of the left thumb and grasped the former with the left thumb and index. All the other loops were dropped and the strings drawn taut. The Indian point natives thereby had the left index caught in a noose, i.e. speared, the Mackenzie natives the right thumb."

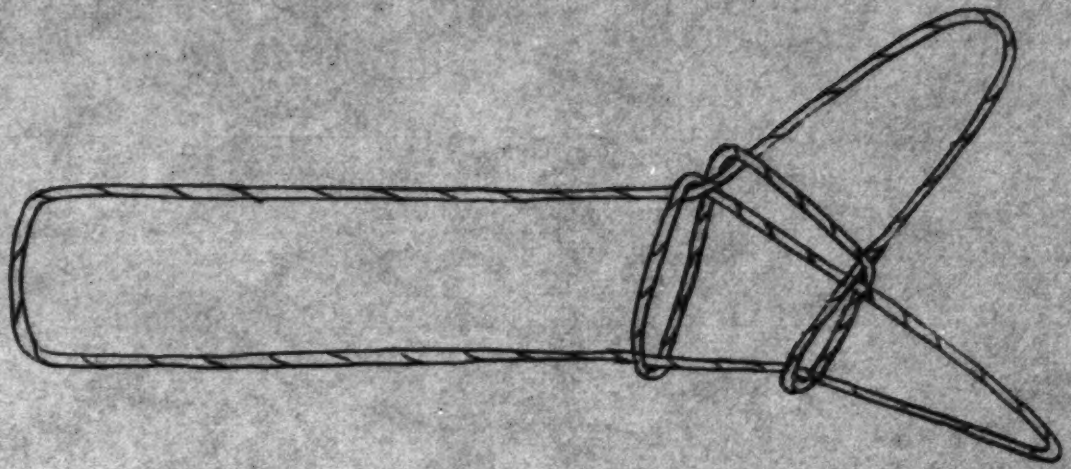

Figure 144
XCV. THE DOG OR FOX

"FIGURES BEGINNING WITH OPENING C

XCV. The Dog or Fox

This figure is called qɪ'mɪq, 'dog,' by the Barrow and Inland Eskimos of Northern Alaska, teriγän·iaq, 'fox,' by those of the Mackenzie delta and the Coronation gulf. It is the introductory stage to a variety of different figures known all along the coast.

Opening C.
Bring the hands together, the left palm turned downwards, the right upwards.
With the palm of the right index from the distal side take up the left thumb-index string (i.e. the string which passes over the backs of the left thumb and index).
At the same time drop the left thumb loop and with its palm, also from the distal side, take up the corresponding string on the right hand.
Draw the hands apart and take up with the left thumb the radial left index string from the proximal side; navaho the thumb and drop the index loop.
Drop the right thumb loop.

At this stage the Mackenzie natives chant:
teriγän·ialuno nuyaqcatɪŋi The fox . . . .

kaiyuɣiaqtokɪɲi — Pounding
täciɣäm cɛnani — Beside the lake
täciɣäm cɛnani — Beside the lake.
äcɔɣɣʌi ayäcɔɣɣʌi — . . . .
tɛriɣän·ialuk mɑn·ɪkciuɣayuk- — The fox likes to look for eggs.
tualuk ayait

The other Eskimos have no song with it."

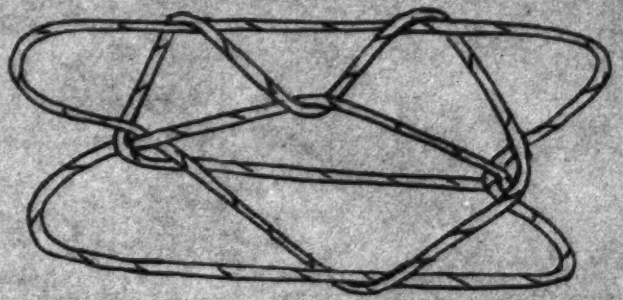

Figure 178

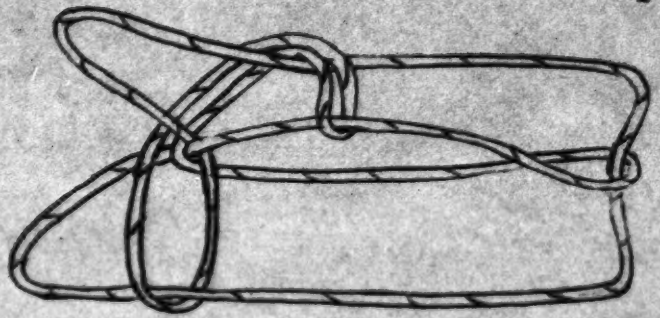

Figure 179

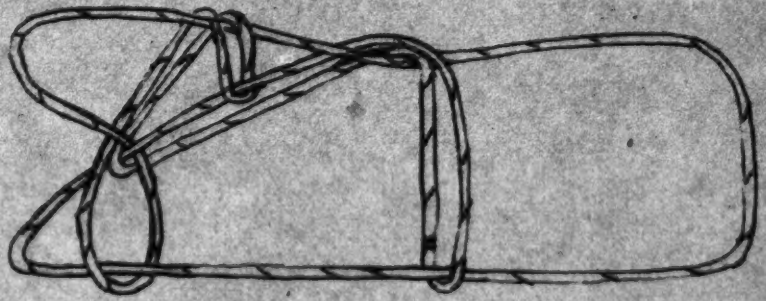

Figure 179a

CXVII. THE BROWN BEAR'S PACK

"MISCELLANEOUS OPENINGS

SECTION 1. THE BROWN BEAR'S PACK CYCLE

There are a number of figures which all reach a common stage in their evolution, then branch off. The 'brown bear packing something on its back' is one of the most familiar of these figures, and may conveniently give its name to the whole series. Two of the figures are found all the way from Barrow to Hudson bay, one is confined to the Mackenzie delta and Coronation gulf, while four are purely local, one being found among the Eskimos of Indian point, Siberia, and the other three in Coronation gulf. In addition to these there are three figures which vary the opening a little; one comes from Indian point, one from the Inland Eskimos of northern Alaska, and the third from the Mackenzie river.

The intermediate stage through which the figures of 'the brown bear's pack' cycle pass is reached in the following manner:

Loop about four inches of string over the backs of the thumbs, holding the ulnar strings in the palms of the hands.

With the palms of the indices from the distal side take up the string running between the two thumbs and turn the indices outward.

With the palms of the thumbs from below take up the opposite thumb-index strings and return, dropping all but the thumb and index loops.

The ulnar index strings cross one another.

Pass the little fingers below all the strings and push out with their backs the proximal ulnar thumb string, then hook their palms over the upper of the intersecting strings (the ulnar index string on one side and the distal ulnar thumb string on the other).

Turn the thumbs downward so that a loop drops off from each, leaving an upper transverse string over which a loop passes; then turn the thumbs upward again.

With each thumb from the proximal side take up the radial index string of its hand, navaho the thumbs, drop the index loops and transfer the thumb loops to the indices.

This is the intermediate stage. [136B]

CXVII. The Brown Bear's Pack

The Barrow Eskimos call this figure kicɨqcɣaq, the Inland natives kitɨxɣaq, both words meaning 'a blubber poke.' Its continuation produces 'the brown bear carrying it away.' The Mackenzie natives call it ämalɨɣyuk 'a brown bear carrying a pack.' The Copper Eskimos call it by the same name, ämalɨɣyuk, but they too fail to specify what the pack is. In Boas' collection from Cumberland sound the figure is called ameyookjew, 'one carrying a pack.'

Make the intermediate stage so that you arrive at fig. 178.

A string now passes from the left palmar string to loop round the lower transverse string. Pass the left thumb into the figure below this string and take it up with the back of the thumb.

Insert the right thumb into the left thumb loop from the proximal side, then with each thumb from the proximal side take up the radial index string of its hand. Navaho the thumbs and drop the index loop. You have 'the blubber poke.'

Two strings run from the poke to pass round the left palmar string. Pass the left index into the figure below these two strings from the distal side, raise them up with the palm of the index, then from the distal side take up with its palm the radial thumb string and draw it through to the distal side.

Drop the left little finger loop and hold the left index loop in the left hand.

You have 'the brown bear' going away to the right, carrying its pack on its back. (1)
[137]

"1. Boas has the same figure from Cumberland sound with the name nivenga quattvta, which seems to mean 'frozen meat suspended.'"

The Inland Eskimos say:
kicιqcγaq kicιqcγaq αklαm ämaqciγatιn ämaqtιŋianiluŋa oqιλyavuŋa ämaqtoxλuγo aulautiγa

'Poke, poke, the brown bear is carrying you off . . . .Putting it on its back it carried it away.'

The Mackenzie natives say:
ämalιγyuk ilätιnŋoq aquväλ·αktut ämaij·un qimαγλuγo upιtkιt

'Pack-bearer, your relatives, it is said, are hunting whales. Leave your pack and follow them.'

At the word qimαγλuγo pass the right index into the figure from the distal side underneath 'the bear's pack' and draw out with its palm the upper transverse string. Drop the right thumb loop.

You have 'the brown bear' going off without its 'pack.'"

4: Jenness--178B-181B (1913-16) 1924 Copper Eskimo
116, 524

"STRING TRICKS AND GAMES

I. Cutting the Hand

This trick is known to the Barrow and Inland natives as ăγiγasiniq, 'cutting the hand.' It is known in some form everywhere from Cape Prince of Wales to Coronation gulf. Mrs. Jaynes gives it from the Philippines and Caroline islands (p. 339).

Make Opening A.

Let another person insert his hand through the middle between the index loops.

Drop all but the thumb loops; the hand is caught in a loop.

Make Opening A with the thumb loops without releasing the other's hand, and again, but this time from the proximal side, let the other person insert his hand through the middle. Drop all but the thumb loops again and the hand is released.

(Generally the string is wound round the other person's wrist instead of being caught by the Opening A movements. The Mackenzie and Coronation gulf natives seem never to do it by Opening A. Occasionally the trick is played by the operator on himself by winding the string round his neck instead of round some one else's wrist.)

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4: Jenness--9B-12B (1913-16) 1924 Copper Eskimo
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"The collections of string figures described in the following memoir were obtained at different times and in different places during the years 1913-1916. Those from Alaska were gathered in the winter of 1913-14 from various natives between Barrow and the international boundary, five hundred miles to the eastward. A few Siberian figures were secured in the spring of 1914 from some Indian point Eskimos belonging to the steam whaler Belvedere, caught in the ice off this coast. During the same spring I met some Mackenzie delta Eskimos at Icy reef, close to the boundary, and obtained some notes on the game in their region; further information was obtained at Herschel island during the summer, and from some Mackenzie delta natives in the service of the expedition. The figures from the Copper Eskimos were obtained during the years 1914-1916, when the southern party of the Canadian Arctic Expedition had its headquarters at Bernard harbour.

The arrangement of the figures is based upon their opening movements. A secondary arrangement follows the order of their distribution, those which are most widely spread being placed first, then those which are more local. In the case of the local figures, those from Alaska precede those from the Mackenzie delta, and the latter precede those from Coronation gulf. Occasionally a figure which was found in one place only has been placed in another setting when it was obviously derived from or connected with a figure from a different locality.

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After the figures had been arranged in this way and the MS. virtually completed two other collections of string figures, mounted on sheets of paper and cardboard, were submitted to me for examination. The first collection, submitted by Dr. F. Boas, was secured many years ago by Captains Comer and Mutch from the Eskimos of Cumberland sound and the west coast of Hudson bay. The other collection, submitted by Captain Joseph F. Bernard, was obtained by him in 1922 from the Maritime Chukchee on the Siberian coast between Capes Nuniamo and Unikin. No information was obtained as to how these figures were constructed, but about 60 per cent of them could be identified with figures in my own collection. The remainder I have disregarded altogether, partly because of the lack of information as to how they were made, and partly because in many cases the string had been distorted out of all semblance to its original shape. In the Appendix, however, I have given a list of the unidentified figures from Cumberland sound and Hudson bay.

As far as the literature is concerned, very little has been published concerning Eskimo string figures. The largest collection hitherto made is that of Dr. G. B. Gordon, obtained on the west coast of Alaska in 1905; (1) Mrs. Jaynes has republished

"1. Gordon, G. B. Notes on the Western Eskimo, Transaction of the Department of Archaeology, Free Museum of Science and Art, University of Pennsylvania, Vol. II, part I, 1906."

these figures, together with two or three new ones which she obtained from an Eskimo of the same region. (2) Klutschak illustrates three figures from the Eskimos of King William island, (3) and Dr. Boas has published five from Cumberland sound. (4) From Labrador and Greenland the only figures recorded, to my knowledge, are six that were obtained by Dr. A.L. Kroeber from some Eskimos of Smith sound. (5) [10B]

In describing the different figures I have used the technical terms devised by Drs. Haddon and Rivers. (1)

'Terminology. -- A string passed over a digit is termed a loop. A loop consists of two strings. Anatomically, anything on the thumb aspect of the hand is termed 'radial,' and anything on the little finger side is called 'ulnar,' thus every loop is

---

"2. Jaynes, Mrs. C.F. String Figures. New York, 1906.

3. Klutschak, H.W. Als Eskimo unter den Eskimo. Leipzig, 1881, p. 139.

4. Boas, F. Internationales Archiv für Ethnographie, I, 1888, p. 229; cf. the same author, The Central Eskimo, Sixth Annual Report, Bureau of American Ethnology, Washington, 1888, p. 569.

5. Kroeber, A.L. The Eskimo of Smith Sound. Bulletin of the American Museum of Natural History, Vol. XII, -899, p. 298.

1. Rivers, W.H.R., and Haddon, A.C. A Method of Recording String Figures and Tricks. Man, II, 1902, p. 147."

composed of a radial string and an ulnar string. By employing the terms thumb, index, middle-finger, ring-finger, little-finger, and right and left, it is possible to designate any one of the twenty strings that may extend between the two hands.

A string lying across the front of the hand is a palmar string, and one lying across the back of the hand is a dorsal string.

Sometimes there are two loops on a digit, one of which is nearer the finger-tip than the other. Anatomically, that which is nearer to the point of attachment is 'proximal,' that which is nearer the free end is 'distal.' Thus, of two loops on a digit, the one which is nearer the hand is the proximal loop, that which is nearer the tip of the digit is the distal loop; similarly we can speak of a proximal string and a distal string.

In all cases various parts of the string figures are transferred from one digit or set of digits to another or others. This is done by inserting a digit (or digits) into certain loops of the figure and then restoring the digit (or digits) back to the original position, so that they bring with it (or them) one string or both strings of the loop. This operation will be described as follows: 'Pass the digit into such and such a loop, take up such and such a string, and return.' In rare cases a string is taken up between thumb and index. A digit may be inserted into a loop from the proximal or distal side, and in passing to a given loop the digit may pass to the

distal or proximal side of other loops. We use these expressions as a general rule instead of 'over and under,' 'above and below,' because the applicability of the latter terms depends on the way in which the figures are held. If the figures are held horizontally, 'over and above' will correspond as a general rule to the distal side, while 'under and below' will correspond to the proximal side. In some cases when there is no possibility of confusion, we have used the shorter terminology.

A given string may be taken up by a digit so that it lies on the front or palmar aspect of the finger, or so that it lies on the back or dorsal aspect. In nearly all cases it will be found that when a string is taken up by inserting the digit into the distal side of the loop, the string will have been taken up by the palmar aspect, and that the insertion into the proximal side of the loop involves taking up the string by the dorsal aspect of the digit.

Other operations involved are those of transferring strings from one digit to another and dropping the strings from a given digit or digits.

The manipulation consists of a series of movements, after each of which the figure should be extended by drawing the hands apart and separating the digits. In some cases in which this would interfere with the formation of the figure, a special instruction will be given that the figure is not to be extended. Usually it is advisable to keep the loops as near the tips of the digits as possible.

There are certain opening positions and movements which are common to many figures. To save trouble these may receive conventional names; the use of these will soon be apparent, but it is better to repeat descriptions than to run any risk of obscurity. [11B]

Position I. -- This name may be applied to the position in which the string is placed on the hands when beginning the great majority of the figures.

Place the string over the thumbs and little fingers of both hands so that on each hand the string passes from the ulnar side of the hand round the back of the little finger, then between the little and ring fingers and across the palm; then between the index and thumb and round the back of the thumb to the radial side of the hand. When the hands are drawn apart the result is a single radial thumb string and a single ulnar little finger string on each hand with a string lying across the palm.

This position differs from the opening position of the English cat's cradle in which the string is wound round the hand so that one string lies across the palm and two across the back of the hand with a single radial index string and a single ulnar little finger string.

Opening A. -- This name may be applied to the manipulation which forms the most frequent starting point of the various figures. Place string on hands in

Position I. With the back of the index of the right hand take up from proximal side (or from below) the left palmar string and return. There will now be a loop on the right index, formed by strings passing from the radial side of the little finger and the ulnar side of the thumb of the left hand, i.e., the radial little finger strings and the ulnar thumb strings respectively.

With the back of the index of left hand take up from proximal side (or from below) the rigth palmar string and return, keeping the index with the right index loop all the time so that the strings now joining the loop on the left index lie within the right index loop.

The figures now consists [sic] of six loops on the thumb, index, and little finger of the two hands. The radial little finger string of each hand crosses in the centre of the figure to form the ulnar index strings of the other hand, and similarly the ulnar thumb string of one hand crosses and becomes the radial index string of the other hand.

The places where the strings cross in the centre of the figure may be termed the crosses of Opening A. '

The term 'navaho' is derived from Miss Haddon, who defines it thus. (1) 'When there are two loops on a digit, a distal one and a proximal one, you are often

required to lift the proximal loop over the distal one, and over the tip of the digit on to its palmar aspect. This movement I refer to as 'Navahoing' on account of its frequent occurrence among the string figures of the Navaho Indians of New Mexico, U.S.A.'

For the purpose of this monograph I have ventured to add three new terms, two of which indicate opening movements from which many figures are derived, while the third denotes a movement which recurs so constantly that the Eskimos themselves have given a special name to part of it. These new terms are:--

Opening B--

Make Position I. Bring the right hand across and with the palm of the right index (i. e. from the distal side) take up the left palmar string and return, half-circling the index counter-clockwise. With the back of the left index from the proximal side take up the radial left little finger string. Drop both little finger loops. (See fig. 1.) [12B]

Opening C

Loop over the thumb and index of each hand. With the backs of the little fingers from below push back the radial thumb strings, then hook their palms down over the ulnar

"1. Haddon, Kathleen. Cat's Cradle from Many Lands, London, 1912, p. 5."

index strings. (See fig. 2.)

Katilluik--

Katilluik (Barrow Kätiλ·uiK or Katiλ·uγiK, 'put two things together') is a movement which can take place only at a later stage in the evolution of a figure. It necessitates separate loops on each thumb and index, and describes the transferring of the left thumb loop from the proximal side to the right thumb (or vice-versa, according to which loop lies outside the other). The left thumb is then inserted, also from the proximal side, into both the right thumb loops. Draw the thumbs apart, then with each thumb from the proximal side take up the radial index string of its hand, navaho the thumbs and drop the index loops.

The Mackenzie delta term for this movement is neoveKtiλ·uγiK which has the same meaning. Strictly speaking, both terms refer to the first stage of the movement only, the combining of the loops on the thumbs. For an example of the complete movement see No. I, 'the two brown bears.'

For the drawings of all the figures in this paper I am indebted to Mr. O.E. Prud'homme, artist of the Victoria Memorial Museum, Ottawa."

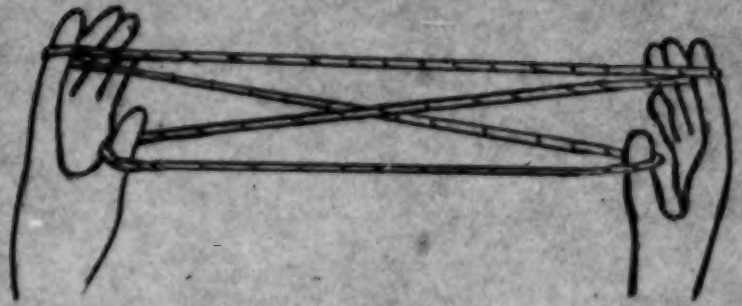

Figure 1--Opening B

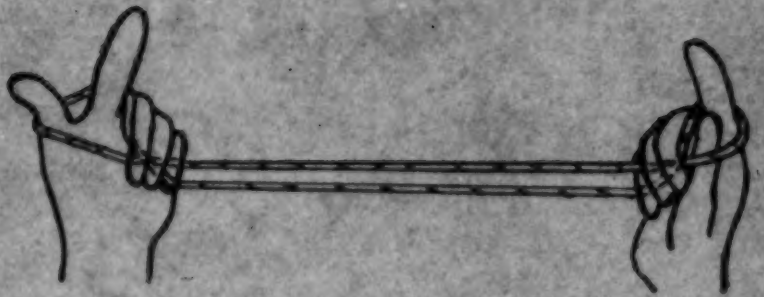

Figure 2--Opening C

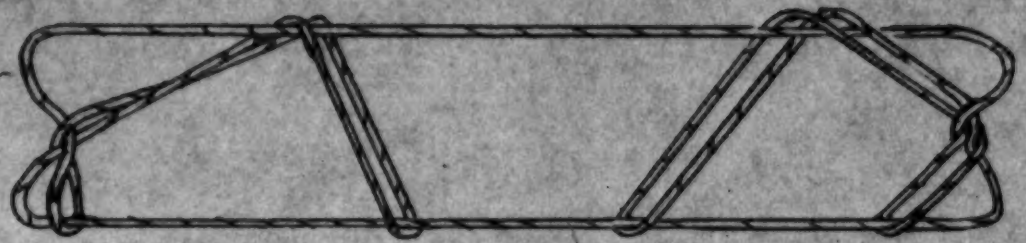

Figure 3

I. THE TWO BROWN BEARS

" PART I

FIGURES BEGINNING WITH OPENING A

SECTION I. FIGURES KNOWN ALL ALONG THE NORTH COAST

SUBSECTION A. THE BROWN BEAR CYCLE AND KINDRED FIGURES

I. THE TWO BROWN BEARS

This figure is known to the Diomede Islanders as 'the two caribou without their horns'; at Point Hope and Barrow it is called aklak--'the two brown bears.' The same name is given to it by the Inland Eskimos between Barrow and the Mackenzie river, and by the Mackenzie river natives; the latter make a slight variation in the final movements which nevertheless produces the same result. The Copper Eskimos follow the Mackenzie natives in this respect, and call the finished figure akayyuk, a word which has the same meaning, 'the two brown bears.' In Cumberland sound a native who made the figure for Boas wrote its name aktakjew or aktin, the meaning of which I do not know. There is no figure more widely known among the western Eskimos, and the Barrow and Inland natives commonly challenge each other to a contest of speed in producing it.

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The Alaskan method of producing 'the bears' is given first:

Opening A.

With the thumbs from the proximal side remove the index loops. With the indices from from the distal side remove the little finger loops.

Pass the little fingers from the proximal side, from below, into the proximal thumb loops and into the index loops, hook them over the radial index string, and hold it firmly against the palms.

Pass the indices over the distal thumb loops and with their palms draw the upper transverse string through each index loop, thereby navahoing the indices. Navaho the thumbs.

Katilluik the thumb loops, and remove the new thumb loops to the indices. From each hand a string runs from the ulnar index string to loop round the lower transverse string near the middle. Take each up with the back of the nearer thumb from the proximal side, then with each thumb from the proximal side take up the radial index string of its hand; navaho the thumbs and drop the index loops. You have 'the two brown bears.'

[14B] The Mackenzie and Copper Eskimos proceed in the same way as above up to the stage immediately preceding the navahoing of the thumbs. At that point, instead of navahoing, they drop the thumb loops. A large loop then hangs pendent near each hand on the proximal side of all the strings.

Pass each thumb down on the proximal side of all the strings, and from the distal side (i. e. from below) pass it into the nearer of these two loops; then with each thumb from the proximal side take up the radial index string of its hand. Navaho the thumbs and drop the index loops. You have 'the two bears.'"

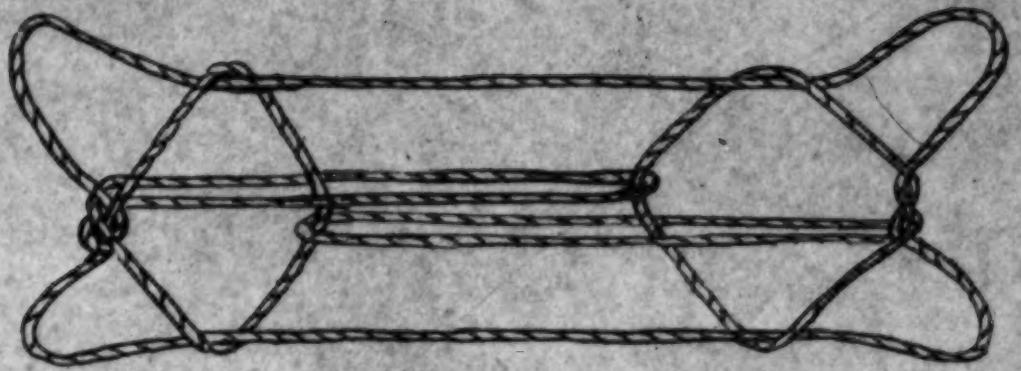

Figure 15

XII. TWO MEN HAULING ON A SLED

XII. Two Men Hauling On A Sled

This name, noqɛt·ɔɣyuk, or 'two men hauling on a sled,' was assigned to the figure by some Eskimos from the west end of Coronation gulf. Some natives from Bathurst inlet, however, at the eastern end of the gulf, called it numi·ɣaqtɔɣyuk, or 'two men having a tug-of-war in a dance house.'

Opening A.

Pass the indices into the thumb loops from the distal side and remove its loops.

With the thumbs from the proximal side take up the two ulnar index strings and drop the index loops.

With the indices from the distal side remove the little finger loops.

With the backs of the little fingers from below push back the two ulnar thumb strings, then hook their palms down over the radial index strings.

With the palms of the indices from the distal side draw through the upper transverse string, and drop that loop from the thumbs.

Katilluik the thumbs.

You have the 'two men hauling on a sled.'"

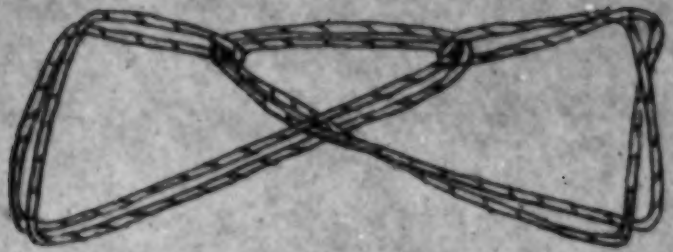

Figure 20

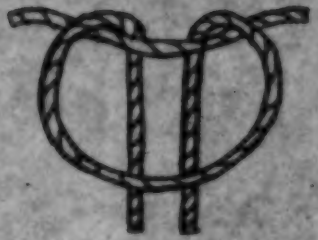

Figure 20a

XV. THE LITTLE FINGER

"SUBSECTION B. THE LITTLE FINGER CYCLE

XV. The Little Finger-ɩtiqɔγaq (Barrow, Inland and Point Hope Eskimos)

The Anus-ɩtiq (Mackenzie and Coronation gulf)

Opening A.

Pass the ring fingers from the distal side into the little finger loops and take up from the distal side, behind all the other strings, the radial thumb string. Drop the thumb loops.

Again insert the ring fingers from the distal side into the little finger loops, and, releasing the little fingers, insert them from the proximal side into the ring finger loops.

Pass the thumbs over the radial index strings and take up with them from the proximal side the two radial ring finger strings.

Drop the index loops.

Pass the indices from the distal side into the thumb loops and twist their backs round the two strings that run medially from the palmar strings.

Drop the thumb and the little finger loops; pass the remaining three fingers of each hand into the index loops, and grasp with them the radial strings.

A triangle is formed in the middle, with its apex pointing downwards; by see-sawing the hands it can be made larger or smaller.

Let some other person pass his little finger into the triangle; then distend the ulnar strings so that the finger is nipped tight. It can be released, however tightly held, by bending it round, passing it between the two ulnar strings that cross on the outside of the other two, then bending it back again, when it slips out quite readily.

'The little finger' can be made in a variety of ways, of which three are given below. It is the starting point of a number of figures, while, on the other hand, two or three completed figures, e.g. 'the fish-net,' can be converted into 'the little finger.' A Point Hope native, who had learned the European figure commonly known as 'the cat's cradle,' converted that also into 'the little finger.'

Second Method

Loop over the indices.

Thread one index loop through the other and exchange them on the indices, then proceed as in the first method when the corresponding stage is reached. [27B]

Third Method

Loop over the thumbs and indices of each hand.

Close the remaining fingers of each hand over the transverse strings and turn the

hands inwards and downwards so that each thumb-index loop slips off and falls over the transverse strings.

With the thumbs and indices draw out the two transverse strings.

Two loops now cross the transverse strings. Shake them so that one passes over the top of the other, holding the loops meantime in the hands.

With the backs of the indices take up these crossing loop strings (the side strings of a triangle), and drop the hand loops. Hold the index loops in the hands and you have 'the little finger.'

Fourth Method

Position 1, left hand only.

Pass the other end of the loop under the palmar string from the proximal side and lay it back on the palm, making a small circle thus: [Fig. 20a]

Insert the left thumb into the circle from above (i.e. from the outside) and the left little finger similarly on the opposite side of the two pendent strings (at x and x, Fig. 20a) and circle them upwards so that they take up the two strings at these places. The old radial thumb and little finger loops drop off in this movement; hold them in the right hand.

Lay the left hand loops on the knees and, carefully withdrawing the left thumb and

little fingers, take up with the left thumb and index the old ulnar left thumb and the radial little finger strings and grasp them firmly in the hand. You have 'the little finger.'"

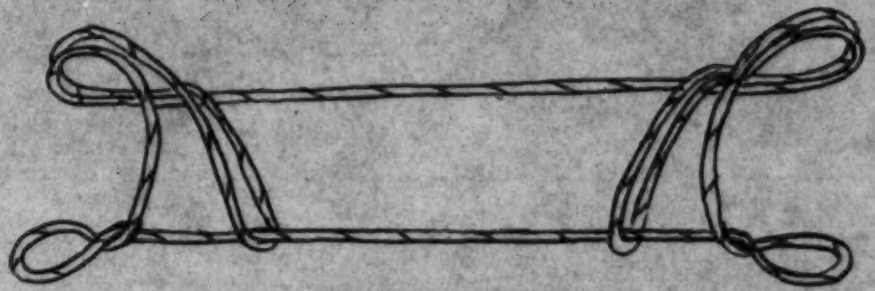

Figure 29

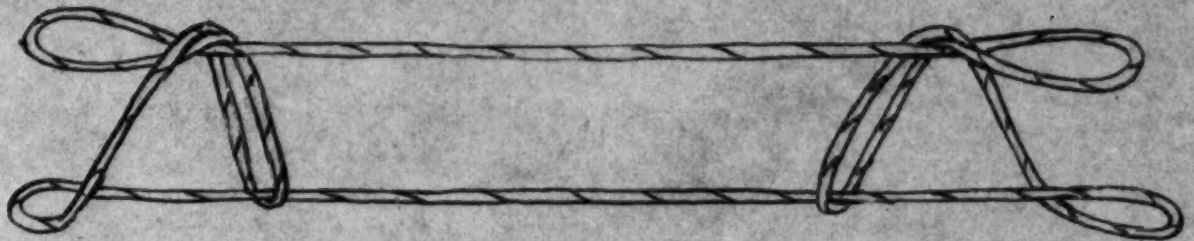

Figure 30

XXV. THE CARIBOU IN THE WILLOWS

"SUBSECTION C. MISCELLANEOUS FIGURES WIDELY DISTRIBUTED

XXIII. Two Toy Labrets

This figure is made in two stages. As Eskimo from Nome and another from Port Clarence knew the first stage only, and called it tutänokɯn^{1} , 'your two toy labrets.' The Mackenzie river natives called it tutaqpäc·iäk, 'two big labrets,' while in Coronation gulf, where labrets are unknown, it was called tuätuäŋätciäk, which was said to mean 'two small stones.' The second stage I found only at Barrow and among the inland natives of North Alaska.

Opening A.

With the thumbs from the proximal side raise the ulnar little finger strings, then from the distal side, i. e. with the backs of the thumbs, take up the radial little finger strings and drop the index loops. Now the Barrow and Inland natives chant as fast as they are able:

tutänokɯn^{1} ɯŋaqpaγɯn	Your two toy labrets have you finished them before me?
qaŋätciaŋənunä γlän	Right up to their conclusion (?) [34B]

Now rapidly pass the index fingers from the distal side in between the proximal and

distal radial thumb strings and with their palms draw through the upper transverse string, dropping the thumb loops and saying:

ka äne ιŋiaγιkpιnʸ Come, be off, I have raced you.

The last movement is the final stage in the making of many cat's cradle figures, and, in association with the words given above, is believed to possess the power of driving away 'the spirit of cat's cradles' (see Appendix, p. 182B). Every stage must be made with the greatest rapidity, lest the spirit should outrace the performer. I did not find this belief in the Mackenzie or Copper Eskimo region, but at Nome and at Port Clarence the natives used to chant at the end of the first stage, which alone they knew:

i·lε rici i·lε rici (meaning unknown)
nεγιniaqpain ιŋiaqpain I shall eat you, I have raced you.
teni Off with you.

At Cape Prince of Wales, Opening A is believed to have the same power in conjunction with the same chant. Make Opening A each time the word i·lεrici is uttered, dropping the index loops again; finally for the third time make Opening A, accompanying it with the the words nεγιniaqpain, etc.; and at the last word teni flaunt it in the face of the spirit."

"XXXI. The Arms

Dr. Gordon has described this figure from Numivak island as 'the arms' (moguk). By the Barrow and Inland natives it is called tälıγγoq, which means 'he holds his arms up.' The Mackenzie and Coronation gulf natives give it the same name, only in those dialects the word follows the ordinary rules of phonetic change and becomes tälıγγoq. No chant accompanies it in any of these [42B] places. The same figure, with the same name, appears in Boas' collection both from the west coast of Hudson bay and from Cumberland sound on Baffin island. A Port Clarence (Alaska) Eskimo said that he had seen a continuation of it which produced niuk, 'the two legs,' but he had forgotten how to make it. Probably it was the same as Dr. Gordon's eruk, which has the same meaning. I never saw or heard of it elsewhere."

II.

This trick is also known everywhere from Barrow to Coronation gulf.

Loop on the little fingers. Pass the ring fingers over the radial little finger strings and take up with their backs the ulnar strings. Similarly with the middle fingers take up the ulnar ring finger strings, with the indices the ulnar middle finger strings and with the thumbs the ulnar index strings.

Now from the distal side pass the indices over the radial thumb strings and with their backs take up the ulnar string; then similarly with the middle fingers take up the ulnar index strings, with the ring fingers the ulnar middle finger strings, and with the little fingers, the ulnar ring finger strings.

Drop the thumb loops and draw the hands apart. The loops all unravel and the string is free.

III.

Another trick known from Barrow to Coronation gulf is 'the mouse' of Mrs. Jaynes, p. 340 ff. Mr. F.W. Waugh found it also among the Eskimos near Nain, in Labrador.

Pass one end of the loop round the foot. Hold the right hand on edge, so that the other end of the loop passes over the right thumb, and there is a palmar and a dorsal string passing over the hand.

Pass the left index under the right palmar string from the proximal side and with its

palm draw through the dorsal string, taking it up where it passes between the thumb and index on the back of the hand. Give the index a half-turn counter-clockwise (i. e. inward) and drop its loop over the right index.

Similarly draw out the dorsal string between the right index and middle finger, and, turning it, drop it over the middle finger.

Repeat the movements with the ring and little fingers of the right hand, then withdraw the right thumb from its loop and pull the long string that runs from the right palm to the foot. All the loops on the fingers resolve and the hand is free. [179B]

IV

Another trick known from Point Hope to Coronation gulf.

Loop over the left thumb, and hold the rest of the string in the palm of the right hand. Spread apart the radial and ulnar left thumb strings about 3 inches from that thumb by inserting the right thumb and index between them from above.

Give the right hand a half-turn clockwise and hook the left little finger over the ulnar right thumb string.

Give the right hand a half-turn counter-clockwise and with the back of the left index from below hold back the radial right index string.

Give the right hand a half-turn clockwise and hook the left ring finger over the ulnar right thumb string.

Give the right hand a half-turn counter-clockwise and with the back of the middle finger from below hold back the radial right index string.

Give the right hand a half-turn clockwise and hold back the ulnar right thumb string with the back of the left ring finger.

Give the right hand a half-turn counter-clockwise and hold back the radial right index string with the back of the left index.

Give the right hand a half-turn clockwise and hold back the ulnar right thumb string with the back of the left little finger.

Give the right hand a half-turn counter-clockwise and take up the radial right index string with the palm of the left thumb.

Drop the right thumb strings and remove the left middle finger loop, allowing it to drop. Pull the two strings of the long loop hanging from the left hand. All the loops on the left hand resolve and the hand is free.

V. A Cape Prince of Wales Trick

Place one end of the loop on another person's finger and hold the other end in the right hand. Lay the left index over the two transverse strings, then place your end of the loop also on the other's finger. Point your left index upward or downward. Two

strings cross diagonally between it and the other person's index.

Take these up where they cross with the right thumb and index and lay them also over the other person's index. Now draw your left index away and his finger is released.

VI. A Point Hope Trick

This closely resembles one that is practised on Goodenough island in southeastern Papua, and another known in Europe.

Hold one end of the loop in the left hand, palm upward, so that you have a radial index and an ulnar little finger string.

Bring the long pendent loop back between the fingers, the radial index string coming back between the index and middle fingers and the ulnar little finger string between and little fingers.

Now pass the pendent strings between the left index and thumb and round the thumb.

With the palm of the left index take up the upper of the two strings (its old ulnar string) from above, after it passes round the thumb; similarly with the back of the left little finger from below take up the lower string (its old radial string). Drop the remnant of the string in the right hand.

Take hold of the two strings on the back of the left thumb, draw them taut, remove them from the thumb and pass them between the middle and ring fingers, then drop them.

Pull the palmar string; the loops all resolve and the left hand is free. [180B]

VII. A Barrow Trick

Hold one end of the loop on the tip of the left thumb, the other in the right hand so that you have an upper and a lower transverse string.

Pass the right hand with its loop below the transverse strings from the proximal side, then loop its upper or radial string counter-clockwise round the left thumb and draw the right hand back by the way it came (i.e. between the two transverse strings and its own ulnar string).

Throw the radial string of the right hand clockwise over the left thumb, then half-circle the right hand loop clockwise to straighten the strings.

Repeat the movement three or four times, taking care to keep the original left thumb loop distal to all the others.

Now drop this distal left thumb loop and pull the radial transverse string. The knots on the left thumb all resolve, and the string comes away free.

VIII. A Copper Eskimo Trick

Place one end of the loop on the tip of the left index.

Pass both the strings that lead from it round the proximal side of the index below the first knuckle so that the index is bent double, then round the distal side under the tip of the index and back round over it again. Repeat the operation in a contrary direction

until the string is exhausted.

Remove the loops that pass round the tip of the index and shake the strings on the palm of the index. The index is freed.

IX. Another Copper Eskimo Trick

Hang one end of the loop on the left thumb and separate the radial and ulnar strings by inserting the right thumb and index in between them.

With the palm of the left index from above take up the radial left thumb string.

Turning the right hand palm downward take up with the left thumb the radial right index loop from the proximal side (i.e. from above).

Drop the left index loop. The left thumb is released.

X. Another Copper Eskimo Trick

Hold one end of the loop between the left thumb and index so that about an inch falls over the back of the thumb.

Thread the other end of the loop through this loop on the back of the thumb and draw the slip-knot tight.

Separate the two long pendent strings about two inches from the left thumb by inserting the right thumb and index between them. You have now on the right hand a radial thumb and an ulnar index string.

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Pass the ulnar right index string round the left thumb in a counter-clockwise direction. Pass the left index under the two transverse strings, push out with it the radial thumb string, then draw up with its palm the ulnar index string and turn the left index outward. Remove the left index loop to the left thumb from the distal side, straighten the two strings that come away from the left thumb, and repeat the movements.

Continue to repeat these movements until the left thumb is covered with loops.

Now drop the right hand strings and pull out the proximal ulnar left thumb string. The loops all dissolve and the left thumb is freed. [181B]

XI

This game is played by the Barrow, inland northern Alaskan and Mackenzie delta natives. Different chants are employed and all manner of variations are experimented with. In the neighbourhood of Barrow a common chant, the meaning of which was unknown, ran:

ɛɣqcipɑku ɛɣqcipɑku ɛɣqcipɑku he (repeated two or three times), and, while twisting the string in the contrary direction, caiyi ɣautɩk caiyi ɣuatɩk caiyi ɣautɩk he (repeated the same number of times).

Place one end of the loop over the foot, and hold the other end on the right index. Begin a chant and at each beat in the music circle the finger once, but always in the same direction. At the end of the chant push down the twisted portion of the strings and

hold it down with the left index inserted between the transverse strings above them. Now repeat the chant, or a similar one, circling the finger in the opposite direction. At the end withdraw the left index. If the circling has been correctly carried out the strings should entirely unravel without leaving a twist.

XII

One child places an end of the loop over his ear and another does the same with the other end. The two then pull against each other until one, unable to bear the pain, gives in or the loop slips off an ear. The Mackenzie river natives in our party were teaching this game to the Copper Eskimos."

"APPENDIX I

ESKIMO SUPERSTITIONS CONCERNING STRING FIGURES

Among nearly all Eskimo tribes there were various superstitions concerning string figures, although for the most part they have disappeared under the influence of Europeans. From Kotzebue sound, in Alaska, to Kent peninsula, at the eastern end of Coronation gulf, there was a taboo against playing the game except in the winter, when the sun no longer rose above the horizon. The Eskimos of Alaska and the Mackenzie delta have long since abandoned this taboo, and the game has become a pastime for every season of the year; but in Coronation gulf it was observed, though not very rigidly, down to the year 1916. Thus a woman showed me some new figures in the summer of 1915, but remarked that we ought to postpone playing the game until the winter. In the same summer a girl who was showing me some figures carefully closed the door of the tent in order that the sun might not shine in on us; for the Eskimos of this region base their taboo on a legend that the sun once beheld a man playing cat's cradles and tickled him. In the autumn of 1915 my half-breed interpreter was making some figures before the sun had disappeared, and an old man accused him of causing all the blizzards that were raging at the time. Dr. R. M. Anderson informs me that while some Coppermine river

natives were making string figures in his tent during the spring of 1910 a curious noise was heard outside, and the Eskimos immediately laid aside their strings and filed quietly outside. His Alaskan interpreter then told him they thought an evil spirit had come amongst them because they were violating the taboo.

This last superstition resembles the Alaskan belief, that there is a definite spirit associated with string figures. The same superstition was evident again in a shamanistic seance that took place in Dolphin and Union strait during the winter of 1915. (1) It was not at all prominent among the Copper Eskimos, how- [182B] ever and there is a strong probability that it was introduced by some western natives within comparatively recent times. In Alaska, on the other hand, many stories are told about this spirit of string figures, which could even become the guardian spirit of a shaman. It was thought to reveal its presence by a peculiar sound like the crackling of dry skins, and it made string figures with its own intestines or with an invisible cord. At Cape Prince of Wales the Eskimos believed that Opening A would drive it away, if the proper words were uttered; but in other parts of Alaska there was a special figure for the purpose. (1) A mere pretence at making the figure was enough, if no string was available; but if the

"1. See 'The Life of the Copper Eskimos,' Vol. XII, Part I of this series, p. 203.
1. See No. XXIII, Two Labrets."

movements were not made every inmate of the house would be paralyzed and die.

The following story about this spirit was narrated by a woman of Cape Prince of Wales:

'On the site of Tin City (a deserted tin mine near Cape Prince of Wales) there once lived a boy who spent all his evenings in making string figures. One evening, as he was amusing himself with his usual pastime, the spirit of cat's cradles entered the house, drew forth its own intestine and began to make the figures also. The mother of the boy snatched the string from her son's hands, exclaiming, 'I told you not to be always playing that game.' Sitting down on the floor opposite the spirit she made Opening A, unmade it, made it again, again unmade it, then, with the exclamation 'I've raced you,' quickly made the figure for the third time and flourished it in the intruder's face. The spirit shuffled nearer the door, and the woman shuffled after it, each striving to outdo the other in manipulating the string. At last the spirit vanished through the door--the woman's presence of mind had saved both her son and herself.'

From Alak, a North Alaskan Eskimo who lived on the Noatak river during his youth, came these two stories:

'The Noatak river Eskimos once constructed a dance-house and gathered inside to practice their dances before sending out runners to invite their neighbours to the festival. Another boy and myself were sent to bring in more food, and while we were absent

some of the children created a great uproar, despite the warnings of the older people. Everything seemed normal when I returned, but suddenly there was a sharp report outside the house, and a noise like the crackling of dry skins. The sound travelled around the house until it reached the door, which was merely an opening covered by a curtain of skin. Presently a stream of mist began to pour in, and behind it, concealed by the mist, the spirit of string figures entered the room. The lamps at first flared brightly, then slowly grew dimmer and dimmer. We sat motionless, paralyzed with fear. One by one the lamps expired and no one stirred, although now and then an old man would cry, 'Will no one go out?' The house grew darker and darker, and my grandfather, who was sitting on one of the benches, called me over to his side. I ran quickly, for I was very frightened, and my grandfather placed me on his knee. Nearly all the lamps had expired when an old man suddenly rushed outside with one of them and raced around the house. The air outside extinguished his lamp, but the people re-lit it, and then lit all the other lamps that had expired. The spirit disappeared, and everything seemed normal again; but presently the old man's hands grew very cold and he sat dumb and motionless. His brother asked him what was the matter, but he could not answer. Then some shamans who were present invoked their magic powers, and in the morning the old man was able to move about again, although his speech did not return to him until some time afterwards. Had he not carried out one of the lamps before they were all extinguished every one of us would have been paralyzed and died. [183B]

'I knew also of two men who lived in another settlement on the Noatak river. They did not believe in a spirit of string figures, but said they originated from two stars, aγγuK, which are visible only when the sun has returned after the winter night. One of these men was inside a dance-house when a flood of mist poured in through the curtain door. His two companions rapidly made and unmade the figure 'Two Labrets,' uttering the usual formula that goes with it; but the mist kept pouring in. Presently it cleared a little, and between the door and themselves they discerned the form of an old man who was moving his hands as though he were making string figures; nor could the men drive him away, despite the persistency with which they made 'Two Labrets.' The lamp was slowly expiring when the sceptic caught it up, raced around the house with it and returned inside again. The figure vanished as soon as he rushed towards the door. Both the sceptic's companions were shamans, and by their magic they saved the man from any evil consequences.'

From Aqsiataq, a Colville river Eskimo, comes the following account:

'I was a young boy at the time, and staying inside the house with my mother. We heard

a loud crackling sound outside as though a number of dried skins were shaking in the wind. My mother immediately ran outside and raced around the house. When she came in again she told me that the sound had been made by the spirit of string figures. We listened again for a time, but the noise was not repeated.

'Certain shamans can control this spirit. I once saw a shaman extend his hands as though he were holding out a string figure, yet no cord could be seen on his fingers. Some of the men laid their belts over the invisible cord, and their belts remained suspended in the air.'

The Eskimos of Hudson bay have a slightly different belief from their kinsmen in Alaska. According to Captain Comer (1) the natives of Iglulik play cat's cradles in the fall when the sun is going south, to catch it in the meshes of the string and so prevent its disappearance. Again, the same authority states (2) that on the west coast of Hudson bay 'boys must not play cat's cradle, because in later life their fingers might become entangled in the harpoon-line. They are allowed to play this game when they become adults. Two cases were told of hunters who lost their fingers in which the cause was

"1. Boas, F., The Eskimos of Baffin Land and Hudson Bay. Bulletin of the American Museum of Natural History, Vol. XV, part 1, p. 151.
2. Id., p. 161."

believed to be their having played cat's cradle when young. Such youths are thought to be particularly liable to lose their fingers in hunting ground-seal.' Among the Copper Eskimos, as well as farther west, young and old play alike; indeed the parents take a special delight in teaching their young children."

"APPENDIX II

DISTRIBUTION OF ESKIMO STRING FIGURES

Several facts have to be borne carefully in mind when studying the distribution of the figures in this collection. In the first place the number of ways in which the string is manipulated is limited, and slightly different combinations of the same movements will produce entirely different results. Hence new figures, which are only slight modifications of figures previously known, are liable to arise at any time; they may retain the old names and entirely supercede the older figures, or they may co-exist with them but be given new interpretations. From many regions only the completed figures are known, and these may sometimes be made in two or three ways. It is therefore very difficult to determine what figures are genetically connected, and still more difficult to decide which should be assigned the priority. [184B]

Another point to be remembered is that the Eskimos of different regions have come into much closer contact with one another during the last few generations. In the Mackenzie delta, for example, on may today find representatives of Siberian, central Alaskan, and Coronation gulf Eskimos living alongside of, or married to, Mackenzie natives proper. String figures are very easily passed on from one tribe to another, and

their distribution in pre-European times can hardly have been quite the same as it is today.

Another difficulty to be encountered is the practical impossibility of securing an absolutely complete collection from any one region. I believe that my north Alaskan and Coronation gulf collections are as nearly exhaustive as could well be obtained, and my Mackenzie delta collection only a little less so; but the collections from the eastern Eskimos, as well as those from Central Alaska and from Siberia, are fragmentary only. The mere fact that a certain figure has not been recorded from these latter places is no evidence that it is unknown there. On the other hand, if it appears in Central Alaska, but nowhere between northern Alaska and Coronation gulf, it is almost certain that it is unknown in those regions at the present time; it may, of course, have been forgotten there, and will recur farther east in Hudson bay, but the probabilities are against this supposition. Similarly a figure that occurs in Hudson bay or in Coronation gulf, but has not been found either in the Mackenzie delta or in northern Alaska, is probably absent also in Central Alaska and in Siberia. Exceptions are always liable to occur, but on the whole these principles will be found fairly accurate.

The table given below does not include all the figures that have been gathered by others from the Chukchee, Central Alaskan and Hudson bay regions, but only those for which I have parallels from the Eskimos between Alaska and Coronation gulf. The column

4: Jenness--183B-191B (1913-16) 1924 Copper Eskimo-3
116, 524, 171

Eastern Eskimos includes the figures obtained by Boas from Hudson bay and Cumberland sound, together with the five recorded by Kroeber from Smith sound. All tricks and figures requiring the co-operation of two people have been omitted, because they have not been recorded outside of the region from North Alaska to Coronation gulf. [188B]

Perhaps the most striking feature about this table is the large number of figures that are known to nearly all Eskimo tribes outside of Greenland and Labrador, the two places from which no figures at all have as yet been recorded. It would seem to be a reasonable assumption that any figure known from Hudson bay to northern Alaska is or was known at some time in central Alaska (probably also to the Siberian Eskimos), thus giving a continuous distribution throughout the Eskimo tribes of North America. Such figures are clearly very ancient, but until we discover that they are found in Danish Greenland, or among Indian or Siberian tribes, it would be unwise to assign too remote a period for their origin. Undoubtedly the Eskimos were accumstomed to make string figures from the very earliest times, but any of those now known might easily have arisen during the last few hundred or a thousand years and been handed on from one tribe to another.

At least twenty-four figures are found from Alaska to Hudson bay;(1) probably the

"I. Nos. I, IV, XXI, XXIV, XXVI, XXVII, XXVIII, XXIX, XXXI, XXXII, XXXIII, XXXVI, XLI, XLIII, LXXVIII, LXXXVIII, CI, CXII, CXVII, CXXXIII, CXXXVII, CXXXIX, CXLVIII."

number is greater still, since no collection from any area is absolutely complete. Of these eleven are found also among the Chukchee. (2) There is nothing to show whether they arose in Asia or in America, or some in one continent and some in the other; but unless future researches show them to be equally wide-spread in northern Asia the presumption must be that the majority at least originated with the Eskimos and spread from them to the Chukchee.

Of figures that appear in one locality alone the table shows 69 examples. Some of these will no doubt be discovered in other regions, but this decrease in the number will be more than counterbalanced by new figures that are also limited to one district. So large a total indicates how popular the game is among the Eskimos, and how easily new figures can arise.

Two figures, LXII and CXXIV, are known only from the Siberian Eskimos of Indian point and from the adjacent Chukchee. The former probably spread from the Chukchee to the Eskimos, since its name, täŋaγot , seems to be the same as tan·nin, which Bogoras gives as the Chukchee term for Russians, or, more usually, Koryaks. It is not unlikely, therefore, that the second figure came also from the Chukchee. One other figure, LXXXI, may have the same source. It appears in both central and northern Alaska, but not to the eastward, and in both these places it has the same name, and the

"2. Nos. IX, XXI, XXVI, XXIX, XXXI, XXXVI, XLI, XLIII, CI, CXII, CXXXVII."

same significance, as among the Chukchee. Of course it may have spread westward from the Alaskan Eskimos to the Chukchee, but then one would expect it to have spread eastward also to the Eskimos of the Mackenzie delta.

This leaves fifty figures that appear in two or more regions, but are not known to be widely distributed throughout the whole American Eskimo area. Now the western Eskimos from Siberia to the Mackenzie delta have been in close contact with one another for at least two centuries. The Mackenzie delta natives used to meet their kinsmen of northern Alaska each summer at Barter island or at some other point along the Arctic coast; and the north Alaskan natives were in close contact with those of Kotzebue sound, who in turn conducted a regular trade with the Asiatic coast natives. It is only to be expected, therefore, that certain figures have drifted eastward along this route; some may not have passed beyond northern Alaska, while others reached beyond the Mackenzie delta. Cases where such figures can be recognized are bound to be rare, but LXXIV appears to be an example. Its opening movements are peculiar, and appear in two other figures only, both of which are confined to the western Eskimos. Among the Siberian Eskimos LXXIV has a very definite significance, but this fades away towards the east and beyond the Mackenzie delta the figure seems unknown. Another example is CXXXVI, which from its meaning would seem to have arisen among the Eskimos around Bering strait. [189B] A much clearer case is furnished by CXXVII and CXXVIII. The

movements in these two figures are very unusual among the Eskimos. CXXVII appears at Indian point in Siberia as a complete series of four figures that illustrate a consecutive story. On the Kobuk river in Alaska the four have dwindled down to three, but the story is still partly retained. The same three figures, with the meaning largely lost, are known to the inland Eskimos of the Endicott mountains in northern Alaska. They are known also at Barrow, but with an entire loss of meaning; for all three are grouped together under one name, the very interpretation of which is uncertain. In the Mackenzie delta but one of the series was found, strangely enough the first, slightly modified and with an altogether new interpretation. Finally, in Coronation gulf, none of the figures are known, but the same peculiar movements recur in the figure of 'the loon' (CXXVIII). It seems fairly certain that the original figure must have come from somewhere around Bering strait, whence it travelled by way of the Kobuk and Noatak rivers to the north coast, spreading westward to Barrow and eastward to Coronation gulf.

Doubtless there are cases where the drift was westward rather than eastward, although I can discover no certain example of this in my collection. Many other figures besides those mentioned above testify by their manner of construction, by their names, and by the chants that accompany them, to the close connection between the Eskimos of the Mackenzie delta and the Alaskan natives. In this respect the string figures merely corroborate what we already know from historical sources, and from the distribution

of labrets, fish-nets and other articles.

Rather more importance attaches to the figues when we pass on to Coronation gulf. We know that during the 19th century, probably also at a still earlier period, the natives around Dolphin and Union strait, at the western end of the gulf, maintained a more or less sporadic intercourse with their kinsmen farther west; while the natives at the eastern end of the gulf, and some of the inhabitants of Victoria island, have been in close contact for many years with the Netchilik Eskimos to the eastward, and, to a lesser extent, with tribes to the south who dwell inland from Hudson bay. The Copper Eskimos of Coronation gulf, therefore, have been exposed to influences from both the east and the west, and the question at once arises as to which group of Eskimos they are more closely affiliated. Their string figures may be worth examining in some detail from this point of view.

The table shows eighty-three figures from the Copper Eskimos. They may be tabulated thus:

24 are common to nearly all Eskimo tribes. (1)

"1. Nos. I, IV, IX, XXI, XXIV, XXVI, XXVII, XXVIII, XXIX, XXXI, XXXII, XXXIII, XXXVI, XLI, XLIII, LXXVIII, LXXXVIII, CI, CXII, CXVII, CXVIII, CXXXVII, CXXXIX, CXLVIII."

25 have not been found outside of Coronation gulf. (2)
29 appear also in the Mackenzie delta or Alaska, but have not been reported from the eastern Eskimos. (3)
4 appear both among the eastern Eskimos and in the Mackenzie delta, but have not been discovered in Alaska. (4)
1 appears also among the eastern Eskimos, but is not known from any other region. (5)

[190B] In the first group of figures, those known to nearly all Eskimo tribes, it is noticeable that the eastern and Coronation gulf natives have a similar interpretation for CXVII, but the interpretation among the western natives is different. IX is a doubtful case of the same thing. In IV, XXXII, and LXXVIII, on the other hand, the interpretations in

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"2. Nos. XI, XII, XLIV, LIII, LXVI, LXVII, LXVIII, LXIX, LXXI, LXXII, LXXXII, XC, XCIII, XCVIII, XCIX, C, CIII, CVI, CXX, CXXI, CXXII, CXXIII, CXXXII, CXL, CLII.

3. Nos. XIII, XV, XVII, XVIII, XXIII, XXX, XXXV, XXXVII, XXXVIII, XLV, XLVI, LV, LVII, LVIII, LXX, LXXIII, LXXVI, LXXXIII, XCV, XCVII, CIV, CXV, CXXVII, CXXIX, CXXX, CXLII, CXLIV, CXLVII.

4. Nos. LII, LIV, LVI, CLI.

5. No. XCIV."

Coronation gulf and the Mackenzie delta are the same, but are uncertain for the eastern Eskimos. XXXIII and CXII are two rather doubtful cases where the eastern, Coronation gulf and Mackenzie delta regions seem to line together in opposition to Alaska.

Very little can be gathered from the twenty-five figures that are not known from anywhere outside of Coronation gulf. Two of them, XCVIII, and XCIX, are very intricate and may have arisen in this area or farther east. Of the twenty-nine figures known from Coronation gulf westwards, but not reported from the eastern Eskimos, one notices that ten of them are reinterpreted in the gulf. Furthermore the chants that accompany so many of them in the west do not appear in Coronation gulf, which may be described as an altogether chantless region as far as string figures are concerned. Four figures are common to the Mackenzie delta, Coronation gulf and Hudson bay Eskimos, but are not known from any other region. Two of them have the same names in the Mackenzie delta and in Coronation gulf, but different names to the eastward; the third has different names in all three places, although there is a similarity between the interpretations among the Copper and eastern Eskimos; the fourth has the same name in all three places, but the two eastern ones agree in making only a simple form of the figure, whereas the Mackenzie delta form is more complicated. It is not improbable, in view of their absence from Alaska, that these four figures all originated among either the Copper or the eastern Eskimos, and spread west from them to the Mackenzie delta. The one

figure, XCIV, that has been found in the two eastern regions alone is also probably of eastern origin, for not only is it made in a very unusual way, but it has no definite significance in Coronation gulf, whereas the eastern natives give it quite a plausible interpretation.

It would appear from this distribution of the figures that the influence of the western Eskimos on the inhabitants of Coronation gulf was on the whole considerably greater than the influence of the eastern natives. In support of this view we may recall that the Copper Eskimos agree with the western natives in their taboo regarding the time for making string figures, and in their belief in a definite spirit of cat's cradles, although the latter superstition is far less prominent than in Alaska and may have been introduced in recent years.

On the other hand it must be remembered that there is a far larger collection of figures from the Mackenzie delta and from Alaska than from the eastern Eskimos, so that the resemblances between the two former regions and Coronation gulf are certain to appear disproportionately great. Furthermore, most of my Coronation gulf figures were collected at the western end of the gulf, where western rather than eastern influences might be expected to predominate. One striking difference between the string figures of Coronation gulf and those of the Mackenzie delta and Alaska is the total absence

of chants in the gulf area;(1) but whether this is the case also in Hudson bay and in Baffin island I do not know.

There are four figures (2) that seem to be absent from Coronation gulf, but are found among the eastern and the Mackenzie delta Eskimos. Two of them have identical meanings in both places, and the interpetation of the third seems to correspond very closely; the meaning of the fourth figure among the eastern Eskimos is uncertain. That there are four such gaps in Coronation gulf, where my collection is fairly exhaustive, would appear to favour a separate [191B] contact between the Mackenzie delta and Hudson bay natives, thus supporting the theory (3) that the Copper Eskimos are intrusive into the Coronation gulf region. However, no great weight can be attached to merely negative evidence.

It may be interesting to notice that the names or interpretations of the figures, like art patterns, are influenced by local conditions. Thus XIII was interpreted by the inland Eskimos of nothern Alaska as an old man dragging a bearded seal, whereas the

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"1. The Copper Eskimo chant in XXVII is almost certainly a fragment of a dance song.
2. Nos.III, XLVIII, XLIX, LXXXV.
3. D. Jenness, 'The Origin of the Copper Eskimos and their Copper Culture,' The Geographical Review, New York. XII, 4, Oct., 1923, pp. 540-551."

Mackenzie delta natives considered the animal a beluga. Bearded seals are not uncommon along the Alaskan coast, but are rare in the Mackenzie delta. The beluga, on the other hand, is particularly common in the delta, and the hunting of it in spring was as much a feature of native life as the hunting of the bowhead whale at Barrow. The very next figure, XIV, 'the reindeer dragging a sled,' could never have been so interpreted outside of Siberia, since there alone (until within the last few years) are reindeer used to drag a sled. XXXI must have received its name of 'beaver' in a region where that animal was known; in Coronation gulf and eastward, where the beaver does not exist, the figure bears a different name. Many other examples could be cited, but it is unnecessary to labour the point.

Many of the Eskimo figures here recorded will undoubtedly be found among the northern Indians of Canada and Alaska. Some, perhaps, were originally not Eskimo figures at all, but were borrowed from their Indian neighbours. The game is fairly popular among these Indians, but so far as I know none of their figures have as yet been published.

String figures have been recorded in large numbers from different parts of the world, particularly from Melanesia. It may be worth pointing out some of the differences between the Melanesian and Eskimo methods of manipulating the string. In both regions the majority of the figures begin with Opening A or Position 1. There are in addition a few abnormal openings, some of which are the same in both places; but what I have called

in this memoir Opening C, which occurs in at least twenty Eskimo figures, seems to be quite unknown in Melanesia. Again, very characteristic of Eskimo figures is the interchanging or combining of the loops on opposite thumbs or fingers, a movement that is rarely found in Melanesia. On the other hand Melanesian players seem often to use the middle fingers instead of the indices, whereas the Eskimos rarely use the middle fingers at all if the indices are available. Altogether foreign to the Eskimos, again, is that most characteristic feature of Melanesian figures, the 'Caroline Islands Extension,' with its outward position of the palms. There is very little difference as regards the complexity of the figures from the two regions, or their realistic interpretations, but it is comparatively rare to find in Melanesia a sequence of figures illustrating a narrative, whereas such sequences are very common among the Eskimos."